

Remarks

Reconsideration is respectfully requested.

New Claims 69 to 89 submitted herewith have been added to more specifically claim the subject matter considered by the inventors to be their invention.

New Claims 69 to 76 are drawn to a method of reducing power fluctuations in the output of a laser, Claims 77 to 88 are drawn to a laser structure with reduced power fluctuations, and Claim 89 is drawn to an external feedback device for a laser cavity respectively.

Claim rejections under 35 USC § 112, second paragraph, have been addressed

Claims 57 to 68 were rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

New Claim 77 now defines a distributed feedback laser cavity for generating a laser signal, thus reciting a structure within the claim language for the generation of the laser output.

Furthermore, new Claim 77 defines a structural co-operative relationship between a distributed feedback laser cavity, an optical signal redirecting element disposed in the optical path of the laser signal, and a saturable absorption element disposed in the optical paths of the laser signal and of the redirected signal portion between the laser cavity and the redirecting element. It is therefore respectfully submitted that new Claims 77 to 88 meet the requirements of 35 USC paragraph 112, second paragraph, and accordingly, consideration of new Claims 77 to 88 with respect to the previous rejections under 35 USC § 112 is respectfully requested.

Claim rejections – 35 USC § 102(b), have been overcome

Previously submitted Claims 44 to 68 were rejected as being anticipated by Fischer et al. (U.S. Pat. No. 5,646,951). Fischer et al. disclose a method of using a saturable absorber added in a laser cavity for promoting a reduction of the linewidth and a single mode operation of the laser cavity. The wave-mixing is a result of intra-cavity optical signals. Furthermore, the laser cavity is a reflection mirror cavity, i.e., the intra-cavity feedback is not distributed, as opposed to a distributed feedback laser cavity.

New Claim 69 recites, *inter-alia*, redirecting a signal portion of the laser signal back towards the laser cavity, and inducing a saturable absorption grating in a saturable absorption element external to the laser cavity in the optical path of the laser signal as a result of wave mixing of the laser signal and the redirected signal portion, whereby, in use, phase-discriminating properties of the induced saturable absorption grating in the optical path of the laser signal reduce power fluctuations in an optical output of the laser cavity.

It is therefore respectfully submitted that new Claim 69 is not anticipated by Fischer et al., and therefore meets the requirements of 35 USC § 102.

New Claim 77 recites, *inter-alia*, an optical signal redirecting element external to the laser cavity and disposed in the optical path of the laser signal for redirecting a signal portion of the laser signal back towards the laser cavity, and a saturable absorption element external to the laser cavity and disposed in the optical paths of the laser signal and of the redirected signal portion such that, in use, a saturable absorption grating is induced in the saturable absorption element in the optical path of the laser signal as a result of wave mixing of the laser signal and the redirected signal portion.

It is therefore respectfully submitted that new Claim 77 is not anticipated by Fischer et al. and overcomes the rejection made under 35 USC § 102 (b).

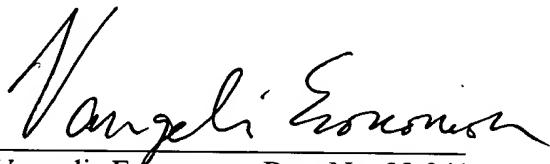
Furthermore, it is respectfully submitted that new Claims 70 to 76, and 78 to 88 meet the requirements of 35 USC § 102 as being dependent upon new Claims 69 and 77 respectively, argued above to be allowable. In addition, each of Claims 70-76 and 78-88 contain additional limitations, which render the claims allowable separately from the independent claims on which they depend.

Accordingly, consideration of new Claims 69 to 88, overcoming the rejections under 35 USC § 102(b) with respect to the previous claims, is respectfully requested.

New Claim 89 is drawn specifically to an external feedback device for a distributed feedback laser cavity, and it is respectfully submitted that new Claim 89 has overcome the rejection made under 35 USC § 102 to the similar cancelled claim.

For the above reasons, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter.

Respectfully submitted,



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